REMARKS

Claims 16-30 are pending in this application. By the Office Action, claims 16-30 are rejected under 35 U.S.C. §112; claim 29 is rejected under 35 U.S.C. §102(e); and claim 30 is rejected under 35 U.S.C. §103. By this Amendment, claims 16 and 29 are amended to address informalities and to conform to U.S. practice. Support for the amendments to claims 16 and 29 can be found in the specification and claims as filed, such as at page 5, lines 5-7 and 27-32. No new matter is added.

Applicants thank the Examiner for the indication that the previous objection and rejections are overcome and have been withdrawn.

I. Rejection Under §112

Claims 16-30 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner argues that the claim language is unclear and complicated, and suggests that the language be clarified. By this Amendment, the claims are amended to address the grounds of the rejection. Reconsideration and withdrawal of the rejection are respectfully requested.

II. Rejection Under §102

Claim 29 is rejected under 35 U.S.C. §102(e) over Klaerner. Applicants respectfully traverse this rejection.

Independent claim 29 is directed to a polymer of acrylamide or of its derivatives having a number-average molar weight of greater than or equal to 100,000 g/mol, wherein it has a polydispersity index of less than 1.2 when the molar weight is absolutely less than 200,000 g/mol and in that it has a polydispersity index of less than 1.4 when the molar weight is greater than 200,000 g/mol. Such a polymer is not disclosed by Klaerner.

Klaerner discloses controlled architecture polymers made preferably with acrylamide type monomers prepared in living-type or semi-living-type free radical polymerizations, with

the architecture preferably being other than linear, such as star, branched, grafted or hyper-branched. The controlled architecture polymers have high weight average molecular weights and low viscosities, which make they particularly useful in replaceable capillary electrophoresis separation media for biological molecules, such as DNA fragments. Klaerner at Abstract.

An aspect of the claimed invention is that the polymer product has at least the following two features:

- a number-average molar weight of greater than or equal to 100,000 g/mol; and
- a polydispersity index of less than 1.2 for number-average molar weights less than 200,000 g/mol and less than 1.4 for number-average molar weights greater than 200,000 g/mol.

However, the combination of at least these two polymer properties is nowhere disclosed by Klaerner.

The Office Action incorrectly asserts that Klaerner discloses polymers having the claimed properties. For example, the Office Action cites to Klaerner as disclosing polymers having a weight-average molecular weight of at least 75,000 and a polydispersity index of not more than about 2.0. The Office Action argues that Klaerner thus encompasses and discloses the claimed invention. Applicants disagree.

Applicants acknowledge that Klaerner discloses broad property ranges for its polymers. Thus, Klaerner discloses a polymer having a weight-average molecular weight of at least about 75,000, and a polydispersity index of not more than about 2.0. See col. 15, lines 33-41. As is well known in the art, polydispersity relates weight-average molecular weight (Mw) and number-average molecular weight (Mn) by the formula polydispersity = Mw/Mn. Accordingly, the disclosure of Klaerner converts to polymers having a number-average molecular weight of at least about 37,500 with a polydispersity index of not more

than about 2.0. However, Klaerner's polymers having a number-average molecular weight of at least about 37,500 with a polydispersity index of not more than about 2.0, is vastly different from the claimed polymer having a number-average molecular (molar) weight of greater than or equal to 100,000 and a polydispersity index of less than 1.2 or 1.4, depending upon the specific number-average molar weight value. Klaerner neither discloses the instantly claimed specific number-average molecular (molar) weight range, nor the instantly claimed specific polydispersity index ranges.

Furthermore, none of the specific examples of Klaerner anticipate the claimed invention. That is, nowhere does Klaerner disclose polymers having a number-average molecular (molar) weight of greater than or equal to 100,000 and a polydispersity index of less than 1.2 or 1.4, as claimed. Specifically, Tables 1 to 5 of Klaerner disclose various polymer materials. The disclosed polymer materials have high weight-average molecular weights, but which have polydispersities greater than the maximum claimed polydispersity of 1.4. Table 6 of Klaerner discloses polymers with a polydispersity index less than 1.2 (for example, 1.12 or 1.13); however, the polymers have weight-average molecular weights that are less than 50,000 and thus even lower number-average molecular weights, which are far below the claimed range.

Accordingly, for at least these reasons, Klaerner does not anticipate the invention of claim 29. Reconsideration and withdrawal of the rejection are respectfully requested.

III. Rejection Under §103

Claim 30 is rejected under 35 U.S.C. §103(a) over Klaerner in view of Takaki. Applicants respectfully traverse this rejection.

Independent claim 29, from which claim 30 depends, is discussed above. Klaerner is also discussed above.

Takaki is cited as disclosing that the polymer is an N-acryloylmorpholine homopolymer. However, regardless of the disclosure of Takaki, any combination of Klaerner and Takaki would not have rendered obvious the claimed invention.

As described above, Klaerner nowhere discloses the polymer of claim 29. Further, Klaerner does not teach or suggest that the polymers could or should be made to possess the combination of properties: (1) a number-average molar weight of greater than or equal to 100,000 g/mol; and (2) a polydispersity index of less than 1.2 for number-average molar weights less than 200,000 g/mol and less than 1.4 for number-average molar weights greater than 200,000 g/mol. Instead, Klaerner teaches polymers having a high weight-average molecular weight but a polydispersity above the claimed range, or having a polydispersity within the claimed range but a weight- (and thus number-) average molecular weight far below the claimed range.

Accordingly, it would not have been obvious for one of ordinary skill in the art, in view of the cited references, to practice the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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